# THE DENTAL PRACTITIONER

*A monthly journal for the Practitioner and his Staff*

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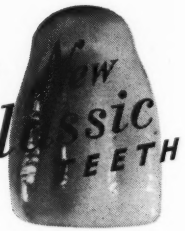


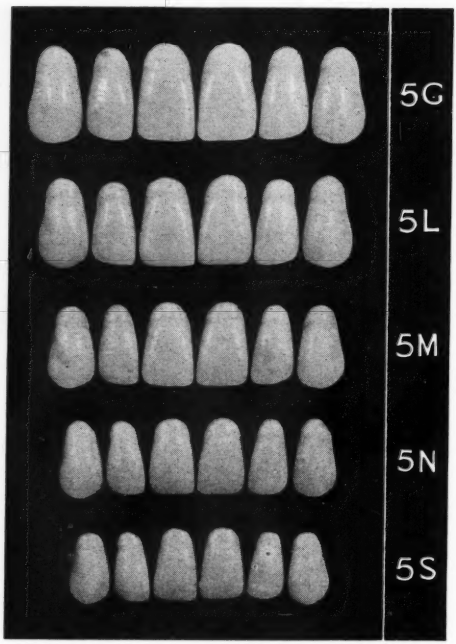


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*A Monthly Journal for the Practitioner and his Staff*

(*Incorporating the Proceedings of the British Society of Periodontology and the Official Supplement of the S.I.M.A.—Dental Laboratories Section*)

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Tables should be typed on separate pages and each should have a caption which will explain the data without reference to the text.

References to dental literature should be recorded in the text, with the name of the author and the year of publication in parentheses. In the bibliography they should be arranged in alphabetical order in the following form, the abbreviations of periodicals being those adopted in the *World List of Scientific Periodicals*, e.g. :—

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LEWIS, R. W. B. (1947), *The Jaws and Teeth*, 2nd ed., 471. London: Science Publishing Co.

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THE
# DENTAL PRACTITIONER
*A Monthly Journal for the Practitioner and his Staff*

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*EDITORIAL*

## WHITE BREAD

With the lifting by the Government of the subsidy on flour (among other commodities), it behoves the Dental Profession to add a word of advice to patients when discussing with them the subject of diet. Apparently it will mean that a new whiter loaf will be available to the public for those who like this type of bread. The "national" loaf will still be on sale with a wheat extraction rate of 80 per cent, while by pre-war standards the whiter loaf will have an extraction rate of 72½ per cent. The lowering of the extraction rate of wheat means that some of the food value will be lost. However, in a resourceful civilized community, this will be made up artificially by the addition of certain chemicals (riboflavin and nicotinic acid). It is always civilized to remove the natural goodness of foodstuffs and replace them artificially with chemicals. This is the progress of our modern times.

On the question of bread it has been said that the low extraction rate of wheat merely leaves "a vehicle for starch". Bread is an easy form of food to give to children, a good slice of bread and butter and the child may be sent into the back yard and out of the way. The growing child needs protein, which of course has been removed from the bread and given to the animals of the field. The manual worker who returns home at the end of the day and sits down to a meal of all the week's meat ration and gives the children bread and butter has got things the wrong way round. It is he who needs the bread and butter for his energy, while the child needs the protein. But despite all the chemicals that may be added to the new bread, it does not lessen its caries-producing potentialities; in fact they are increased. Mothers who have children who develop rapid caries would be well advised to give them a high-wheat-content type of bread, or, better still, bread made of whole wheat, which from a point of view of health is best. It is realized only too well that to tell people not to eat the things they like is usually useless, but the dental surgeon can point out to his patients the need for a carefully balanced diet, particularly in children. If new whiter bread is eaten, it is all the more important to ensure that the sticky mass clinging to the teeth after this type of food should be removed with a toothbrush as soon as possible. There is no substitute for the natural foods of the earth, but if the goodness has been removed and replaced artificially by chemicals (though why this has to happen nobody knows), then double care must be taken of the oral hygiene.

# SUPPURATIVE OSTEOMYELITIS OF THE MANDIBLE*

## WITH PARTICULAR RELATION TO ITS INCIDENCE IN THOSE OF CHINESE RACE

By **WALTER C. ALLWRIGHT**, H.D.D. R.C.S. (Edin.), L.D.S. R.C.S. (Eng.), D.P.D.

### INTRODUCTION

SUPPURATIVE osteomyelitis occurs fairly readily in Europeans under certain circumstances, but usually yields to prompt treatment, and serious cases are not often encountered. In Chinese it occurs with such apparent readiness and develops so rapidly that the impression is given that the Chinese have a racial susceptibility towards the disease.

A description of osteomyelitis of the mandible is presented, together with a limited review of the literature. The author's method of treatment, which is presented, has been developed from experience of cases in Hong Kong.

### DEFINITION

An adequate definition of osteomyelitis as applied to the mandible has given rise to confusion and difficulties owing to the fact that this bone contains very little marrow tissue. Nevertheless, as Henry (1946) points out, custom impels the use of the term, and we can at least compare the cancellous bone of the jaw with the marrow cavity of the long bones. Therefore there may be applied to the disease in the mandible the following simple definition: "Suppurative osteomyelitis is an inflammation of bone which may involve the cortex, the cancellous tissue, and the bone-marrow. The disease may be acute, subacute, or chronic in form."

### INCIDENCE

It is often stated that osteomyelitis of the mandible is uncommon over the age of 40 to 45. The reason for this may be in part that in Europe a high proportion of those most likely to develop osteomyelitis from septic teeth will have lost their teeth by early middle age. Chinese are not so ready to part with their teeth, and they usually consent to extractions only after having experienced considerable pain. Consequently, most of them have teeth well over the age of 45, of which a high proportion are likely to be infected, and cases of osteomyelitis are fairly common among the middle-aged and elderly. The disease appears to be most prevalent among Chinese in their late teens, and their twenties.

Waldron (1943) gives the ratio of incidence of osteomyelitis between males and females as three to one, and this is in agreement with most authorities. Baranoff (1934) quotes Lookomsky (1929) whose 260 cases were divided into 113 male and 147 female. Of 204 Chinese cases seen in the Peiping Union Medical College, Baranoff notes that 181 were male, and only 23 were female, a percentage of 88·73 male and 11·27 female of all ages. Of these 204 cases, 9·8 per cent were under 16 years of age, 46·08 per cent were from 16 to 30, 24·51 per cent were from 30 to 40, 12·26 per cent were from 40 to 50, and 7·35 per cent were over 50 years of age. In further explanation of his figures, Baranoff states that 70 per cent of the new patients attending the Out-patient Clinic during the year 1931–2 were males.

According to Waldron (1943), the mandible is involved in osteomyelitis five or six times as often as the maxilla, and is approximately the eighth bone in frequency of involvement. Baranoff (1934), in an analysis of 1195 cases of osteomyelitis of all bones registered in the Peiping Union Medical College Hospital during the years 1922 to 1931 inclusive, found that the mandible was involved ten times as often as the maxilla, and more frequently than any other bone. There were 204 cases of osteomyelitis of the mandible, 167 of the femur,

* Being a dissertation submitted in respect of Regulation 7 for the Diploma in Public Dentistry of the University of St. Andrews, June, 1952.

the second in order of frequency, and only 36 cases of the maxilla.

Chinese appear to have a high racial susceptibility towards osteomyelitis of the mandible. This apparent susceptibility has been discussed by Tratman (1934). A large majority of his cases in Singapore was made up of Chinese, who constitute about half of the population of that city. At that time he was of the opinion that certain other factors applied in his series of cases which ruled race out of consideration as a predisposing cause. In his own words: "Firstly, the Chinese in Malaya are rarely averse to coming to hospital for treatment, whereas the Malays and Indians are usually averse to so doing . . . Secondly, it is the Chinese who frequent the unqualified dentists most, one of their objects being to have as many gold shell crowns as possible in their mouths, completely regardless of the necessity for or the fit of the crowns and the damage inflicted on the teeth and gums during the process of fitting and afterwards. Thirdly, the Chinese take readily to refined foods . . . and in consequence suffer more from the evils attendant on this than the other races."

In commenting on a case of osteomyelitis of the mandible followed by sequestration of the whole mandible, Tratman (1938) declares that the Chinese have a high racial susceptibility, and states that the Dental Clinic, General Hospital, Singapore, treats annually about 20 severe cases of osteomyelitis of the mandible in only 3000 to 3500 new patients per year, a high rate of incidence. Nearly all the cases are Chinese, who form about three-quarters of all the patients.

Karim (1949), writing of his experience in various States in Malaya, records that over 80 per cent of his cases of osteomyelitis were Chinese. These cases were in districts some of which had a population predominantly Malay, some predominantly Chinese, and some where the population was roughly half Chinese and half other nationalities. He comes to the conclusion that this high percentage of cases among the Chinese cannot be dismissed as accidental, and that there is a definite racial susceptibility, although it is difficult to give any conclusive evidence to explain why this is so.

Chinese in large urban communities like Hong Kong and Singapore have a high caries rate and poor gum conditions, with a corresponding high incidence of alveolar abscess. Nevertheless Chinese brought up in country districts of China generally have a low caries rate, yet the incidence of osteomyelitis is high. Tratman (1949) states that in immigrant Chinese coming to Malaya from country areas of China remote from "Western" civilization, it is found that there is a relatively low caries incidence. Succeeding generations, however, show a very high susceptibility towards caries and a very low degree of natural arrest, and maintain their high susceptibility into adult age.

Many Chinese in towns show signs of undernourishment, and it would be reasonable to expect that their resistance to the onset and development of the disease would be impaired for that reason. The peasant in the country, on the other hand, is rarely undernourished except in areas of famine. Attention is drawn to a case which involved a well-built Chinese farmer who had a caries-free mouth and good gum condition, yet developed a severe osteomyelitis from two areas of pericoronitis of the mandibular third molars. The Chinese have a fairly high incidence of impaction of mandibular third molars, and many cases of osteomyelitis originate from infections around such conditions. Baranoff (1934) found that 47·7 per cent of 174 Chinese patients with odontogenous osteomyelitis were associated with infection in or around the lower third molar teeth. According to Karim (1949) impactions are common also in Malays, yet osteomyelitis is rare among that race.

The possibility of the Chinese being attacked by differing strains of micro-organisms with varying virulence arises. This has been investigated in Malaya by Karim (1949), who reports that no significant difference has been found as between cases of osteomyelitis in Chinese and those of other races. He gives it as his opinion that opium smoking causes lowered body resistance and a susceptibility towards the disease. He states that all his

Chinese osteomyelitis cases, except two, were labourers, and acknowledged opium smokers. The two exceptions were small Chinese children of opium-smoking parents. Karim queries whether there are anatomical peculiarities in the Chinese which would cause the spread of osteomyelitis backwards and upwards in the ascending ramus of the mandible, which is so often seen.

While the present writer believes that the Chinese as a race have a susceptibility towards osteomyelitis of the mandible, the reason is not known. It may be because of anatomical peculiarities, or because of undernourishment. In this connexion, Agnew and Agnew (1943) draw attention to the dietary difficulties of the Chinese and consider that polyavitaminosis is extremely common, and that it leads to the prevalence of diseases, such as cancrum oris, which are almost unknown in the Western world. Wass (1949) contends that osteomyelitis of the mandible is much more common in England since 1942, and attributes this to a decline in nutritional sufficiency. Dowsett (1949) was convinced that the high incidence of osteomyelitis in Egypt was due to the unhygienic surroundings and the fact that the poor people were very badly nourished. It is well recognized in Hong Kong that gross cases if osteomyelitis always come from the poorest and most ignorant strata of the Chinese community, and never from the professional and moneyed classes. A contributory cause is undoubtedly the faith which Chinese patients put in herbal medicines taken internally, and the application of large sticky plasters of a tarry substance to the face. These rubefacient plasters, in the present writer's belief, cause a spread of the disease rather than its localization.

## AETIOLOGY

1. The most common cause of suppurative osteomyelitis of the mandible is odontogenic infection. This usually arises by an extension of the infection from the gangrenous pulp of a tooth. Occasionally, paradontal infection is responsible, with or without the associated trauma of a dental extraction. Impacted third molars are also a frequent cause.

2. Hæmatogenous infection causing osteomyelitis is not so common, is confined mainly to children, and usually occurs during the exanthemata. Stones (1951) quotes Barker (1942) for his statement that osteomyelitis occurs most frequently during scarlet fever and less frequently during measles, diphtheria, chicken-pox, and pertussis. Chinese children are often subject to very bad attacks of measles, and osteomyelitis is often seen which has begun during the course of that disease. Osteomyelitis may also develop following typhoid fever or any debilitating disease.

3. Trauma is often the exciting cause of osteomyelitis. When the trauma of a dental extraction or of a blow on the face sets off an attack, a previous odontogenic infection, acute or chronic, is usually discovered. A localized osteomyelitis is often associated with a fractured mandible, particularly if there is much comminution. In spite of the readiness with which the Chinese develop massive osteomyelitis of the mandible, it is the present writer's experience that for such cases to follow traumatic fracture is unusual.

4. Direct spread by continuity from infective processes in the neighbouring soft tissues may take place. Although this is not common, it is most likely to happen as a result of furunculosis of the chin. Thoma (1948) describes a case of osteomyelitis of the mandible arising by lymphatic extension from a preauricular infected wen. Kallenberger (1949) states that osteomyelitis caused by continuity affects mainly the cortical portion of the bone.

## PATHOGENESIS

The mandible may become infected by the entry of virulent micro-organism; via the following portals: (1) Periodontal membrane; (2) Tooth socket following extraction; (3) Skin; (4) Blood-stream; (5) Direct implantation of micro-organisms.

As all the micro-organisms which may be recovered from a case of infective osteomyelitis are found in the normal healthy mouth, it stands to reason that any breach of tissue down to the bone will expose that bone to infection with a risk of osteomyelitis. Stones (1951) points out that the result of such exposure

to infection depends upon several factors, including the virulence of the micro-organisms concerned, the resistance of the patient, and the local conditions in the mouth. Mowlem (1944, 1945) stresses the vital importance of the blood-supply to and within the mandible. He suggests that "the local vascular system . . . is the key to the mobilization of the defence mechanism". When bone involvement supervenes upon a local soft-tissue infection, the disaster is primarily vascular. Damage to the vascular supply precludes the erection of an efficient leucocytic barrier.

The portals of entry mentioned above may operate as follows:—

1. *Periodontal Membrane.*—Usually an acute alveolar abscess will bring about a localized osteomyelitis, with liquefaction into pus of small necrotic bony spicules. If the osteomyelitis spreads, the pus, instead of remaining localized, spreads through the cancellous part of the bone until arrested by barriers of local immunity in the bone, or by surgical intervention. More rarely, perforation of a root canal by an instrument during root treatment operation may introduce infection directly into the bone via the periodontal membrane.

2. *Tooth Socket.*—When a tooth is extracted, an area of bone is exposed. Normally the bony socket becomes filled with blood-clot and later granulation tissue covers the bone. If the trauma of extraction has been severe, there may be interference with the blood-supply to the part, and thrombosis and osteomyelitis supervene. This is more likely to occur when the bony socket around the tooth to be extracted has been already damaged by acute or chronic infection. Injection of local anæsthetic solution into the inflamed and infected area prior to extraction will by its very bulk tend to cut off the blood-supply to the area. Any fluid so injected, even penicillin solution, would have a similar effect. Anæsthetic solutions containing adrenaline or cocaine are more severe in their action by causing a contraction of blood-capillaries and any larger vessels in the neighbourhood. In this connexion, Round and Kirkpatrick (1935) suggest that there are present in the depth of the tissues micro-organisms which assume invasive characters as a result of this deprivation of the tissues of their blood-supply due to vasoconstriction caused by adrenaline and from tension due to the injected fluid.

Trauma within the tooth socket caused by search for fractured roots, or by curettage, increases the likelihood of osteomyelitis occurring. Cameron (1925) considers curettage of sockets to be very dangerous. Waldron (1943), while recommending prompt extraction of an offending tooth at the early stage of an acute periapical infection, advises care in curettage.

3. *Skin.*—Invasion of the periosteum and bone may occur as a direct extension of infection of the face. A furuncle may be traumatized by a blow, by squeezing, or by injudicious surgery. Such a development is not common, but is more likely to occur in the region of the chin where the skin is in closer association with the bone of the mandible.

4. *Blood-stream.*—Osteomyelitis may develop as a result of generalized pyogenic infections. The site in the jaws is usually at a point where infection or the effects of severe trauma are already present. The disease may begin during exanthematous fevers, partieularly in children, and again the site is usually that of an infected tooth or traumatized soft tissue or bone. Wilensky (1932) draws attention to the fact that cases of osteomyelitis may arise apparently from a tooth, but in reality the infection comes from a metastatic focus in another bone. Round (1936) presents a case of a boy of 11 years who was found to have an old fracture between $\overline{6}$ and $\overline{7}$ apparently caused by a metastatic osteomyelitis during an attack of diphtheria five years previously.

5. *Direct Implantation.*—For many years the practice of carrying out extractions during acute alveolar abscess, and even early acute periodontitis without abscess, was condemned by most dentists. The trauma of the extraction was thought to cause spread of infection. It is believed likely that the unhygienic conditions under which extractions were performed were responsible for much of the spread of infection following extraction of abscessed teeth. The carrying of infection by dirty hypodermic needles used to be prevalent in this country, and undoubtedly still is in the

Far East, where unqualified dentists pursue their calling in large numbers. Much of the osteomyelitis encountered among Chinese in Hong Kong can be attributed, in the opinion of the writer, to the use of dirty needles and forceps, together with the stasis produced by the injection under pressure of local anæsthetic with adrenaline into inflamed gums and bone.

[*The continuation of this article will appear in our March and subsequent issues.*]

# DENTAL MECHANICS AND MATERIALS

By **J. SEEAR**, L.D.S. R.C.S. Eng.

## V. MODEL MATERIALS AND SEPARATING MEDIA, MODEL POURING AND SHAPING

PARTS I–IV of this series have dealt with the various types of impression materials, viz., wax, composition, plaster, hydrocolloids and alginates, and the zinc-oxide and eugenol pastes and cements. All these, of course, merely produce a reverse or "negative" of the teeth and/or jaws of the patient. The next step

*Fig.* 1.—Plaster being vibrated into impression.

therefore is to convert the negative to a positive of the original, i.e., to make a *model* or *cast*. There are numerous materials used for this purpose, viz., plaster-of-Paris, artificial stones (Calestone, Kaffir D, etc.), cements, amalgams, fusible alloys.

Plaster and the artificial stones are those commonly employed for casts on which dentures and orthodontic appliances are to be fabricated, the cements, amalgams, and fusible alloys are used in inlay, crown and bridge work, and in "swaging"—all of which will be dealt with in future articles.

### MODEL MATERIALS

**Properties desirable.**—

1. Extreme hardness and strength, particularly against crushing strains and the effect of heat.

2. No change in volume during and after "setting".

3. Faithful reproduction of the impression.

4. Reasonable working and setting time.

*Plaster-of-Paris.* — The chemistry, etc., of this material has been fully dealt with in Part II of the series (*see* Vol. I, No. 10, pp. 310–314).

Plaster which is suitable for impressions is not, however, suitable for models, as it does not attain a sufficient hardness. Therefore a coarser variety is used combined with a much stiffer "mix", i.e., less water, more powder. Plaster for models should have an anti-expansion solution added, in the same way as does plaster for impressions. A different solution is used, however, which aids also in hardening the ultimate cast. No colouring matter is added for the obvious reason that none is necessary. Osborne (*Dental Mechanics for Students*, 1939), gives the following suitable anti-expansion solution for models:—

| | |
|---|---|
| Potassium sodium tartrate | 4 per cent |
| Borax .. .. .. | 0·2–0·4 per cent |
| Phenol .. .. .. | 0·1 per cent |
| Water .. .. .. | to 100 per cent |

Potassium sodium tartrate is known commercially as Rochelle salt and is the anti-expander. Borax is added to counteract the

accelerating effect, on the set, of the Rochelle salt, and the phenol is to prevent the possible growth of mould fungi.

The mixing ratio of this solution with plaster is given as 40 c.c. of solution to 100 g. of plaster. This is a very "heavy" mix resulting in a hard and strong model.

If a plaster cast has at any time to be heated to a temperature a little above the boiling-point of water, i.e., 100° C., the plaster loses its "water of crystallization" by evaporation, and reverts to the hemihydrate, as discussed in Part II. The plaster mass expands at the same time and decreases considerably in strength. As most dentures are to-day fabricated from acrylic resins, temperatures above 100° C. should not be required and thus plaster would appear to be a perfectly useful model material.

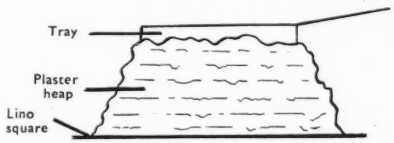



*Fig.* 2.—Diagrammatic representation of the impression inverted on to the plaster heap.

**Artificial Stones.**—These are made basically from hydrocal, which is prepared from gypsum and is identical chemically with plaster. There is a physical difference, however, in that the crystals are separate in hydrocal, thus enabling less water to be used to obtain a workable mix and therefore resulting in a much harder and stronger model.

Mixing ratio for plaster is approximately 60 c.c. : 100 g.
Mixing ratio for artificial stones is approximately 40 c.c. : 100 g.

When dentures are made from acrylic resin there is considerable pressure exerted on the model at various stages in the process and for this reason the artificial stones are far superior to ordinary plaster-of-Paris for the model, owing to their extra surface hardness and strength.

Many operators make their casts using both an artificial stone and plaster. This is in order to save using an unnecessary amount of artificial stone, which is more expensive than plaster. When this method is used the "working surface" of the cast is made with the stone and the rest of the bulk of the model in plaster. The stone portion is poured first and allowed to set before the base of plaster is added.

## THE CASTING OF IMPRESSIONS

(Model Casting, Model Pouring or Cast Pouring)

**1. From a Composition Impression Method.—**

*a.* Wet impression under cold running water.

*b.* Mix plaster or stone to a smooth creamy consistency.

*c.* Shake moisture off impression.

*d.* Fill impression slowly with plaster and vibrate this gently in, making the mix flow from the highest part of the impression down into the deepest depressions.

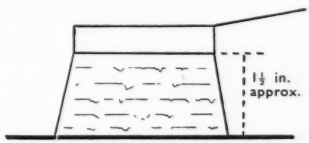



*Fig.* 3.—Same as *Fig.* 2, but with the sides smoothed and the edges of the tray uncovered.

Vibration can be obtained by the use of an actual vibrator or by gently tapping the back of the impression tray against the side of the mixing bowl. (*Fig.* 1.)

The idea of vibration is to cause the plaster mix to flow evenly into all depressions of the impression and to enable trapped air to rise to the surface of the mix.

*Note* : Very heavy or prolonged vibration causes air to *enter* the mix and must therefore be avoided.

*e.* Make heap of plaster (or stone) about 1½ in. high on piece of paper, lino, or a tile and invert impression on to this, keeping the tray level from front to back and from side to side (*Fig.* 2). "Wriggle" impression on to heap to exclude air from between the two layers of plaster.

*f.* With flat spatula smooth cast all around, ensuring that all sides slope outwards and that edges of tray are cleared (*Fig.* 3).

*g.* Allow to set hard.

**Removing Composition Impressions from the Casts.**—First remove tray from composition by

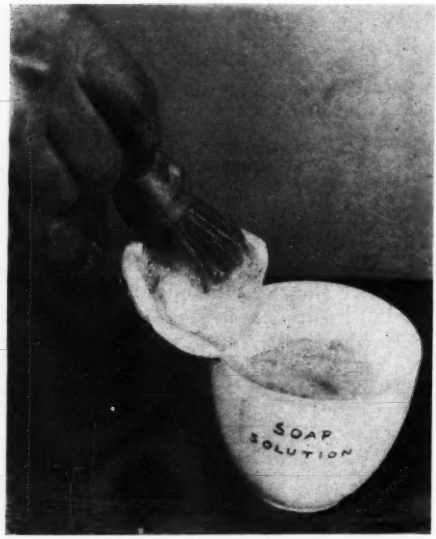



*Fig.* 4.—Plaster impression being soaped immediately prior to cast being made.

tapping. If this does not separate readily place cast with impression and tray in a bowl of very warm water. After a few moments remove tray. Leave cast and composition in the water until the "compo" is thoroughly softened, then gently "peel" it off the surface of the cast.

If the water used is too hot it will cause traces of compo to stick to the cast. When this occurs, allow the pieces to set, soften again in warm, not hot, water, heat an old piece of compo in a flame to get it sticky and with this touch each spot left on model and lift it off.

### 2. Casting Plaster Impressions

**Method.**—The method here is virtually the same as when dealing with compo impressions, except that in this case a *separating medium* has to be used to prevent the plaster (or stone) used for the cast from sticking to the impression plaster.

Perhaps the most common medium used when dealing with plaster impressions is soap. To use this a soap solution is made up and is painted all over the surface of the impression, which is then thoroughly rinsed off under a cold running tap. (*Fig.* 4.)

*Other separating media are*:—Sandarac varnish, colloidin, and waterglass. Two or three thin coats are applied and allowed to dry. Casting is done in the usual way.

**Removing Plaster Impression from Cast.**—This is a much more difficult operation than when compo has been used for the impression and great care must be exercised or the actual cast is easily spoilt.

*a.* Remove the tray by cleaning all plaster from the edges and then gently tapping until it comes away. If this fails to shift the tray, warm it over a bunsen flame and then repeat the tapping. (*Fig.* 5.)

*Fig.* 5.—Cast with the impression still in place. Tray removed.

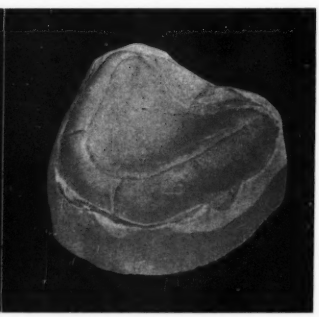


*Fig.* 6.—Plaster impression grooved prior to removal.

*b.* Carefully cut grooves in the impression plaster as seen in *Fig.* 6, i.e., along the centreline of the ridge and then from this down to the

buccal sulcus in the midline and on each side about half-way from the centre to the back edge. The impression plaster is readily detected as it is coloured by the anti-expansion solution used in its original preparation. (*See* Vol. I, pp. 310–314.)

*c.* Tap the impression gently all over and more especially around the buccal areas until some loosening is seen. Remove portions as they become separated from the cast. Leave the centre area until last. (*Figs.* 7, 8.)

*Fig.* 7.

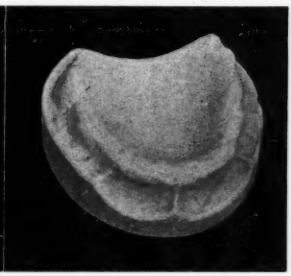


*Fig.* 8.

*Fig.* 7.—Showing three-quarters of the buccal area of the plaster impression removed from the cast.
*Fig.* 8.—Resulting cast after complete removal of impression plaster and trimming away of all excess model material.

*d.* Any small fragments of impression plaster left on the cast should be most carefully removed with a small instrument so that no damage is done to the surface of the cast. The impression plaster, having been coloured originally, is very easy to detect even when only tiny particles are present.

**Removal of "Soluble Plaster" Impressions from Cast.**—As explained in the second article of this series (Vol. I, No. 10, p. 313), soluble plaster contains starch, and when this material is placed in hot water it swells and disintegrates. Thus the cast is readily cleared of this substance simply by immersion in hot water.

### 3. Casting Hydrocolloid and Alginate Impressions

**Method.**—No separating media are necessary and both types of impression should be cast without delay otherwise water is taken up into the material (imbibition) or lost from it by evaporation (syneresis). Always rinse the impressions thoroughly in cold running water prior to casting to remove saliva, etc., and with Zelex (an alginate) a bath is used containing a 3 per cent solution of alum in water, into which the impression is placed for about a minute, followed by a cold water rinse. This is to form an insoluble film over the surface of the impression, preventing a chemical action between the plaster or stone and the alginate, which otherwise causes the cast to have a rough surface.

**Removal of Hydrocolloid and Alginate Impressions from the Cast.**—First remove the tray. In the case of perforated trays, this is done by cutting off all the impression material which has exuded through the holes and then levering carefully. The material can now be peeled away, commencing from the edges. A sharp knife is useful to cut any thick areas. Where a normal impression tray has been used with wax and/or cotton-wool to retain the impression, the tray should be heated to soften the wax and then the tray is readily removed. Zelex impressions should never be left on the model for any length of time as water is lost from the impression material, which then goes quite hard, rendering it difficult to remove from the cast, especially when isolated teeth are present.

### 4. Casting Zinc-oxide and Eugenol Paste or Cement Impressions

**Method.**—Follow the same procedure as with composition impressions, merely rinsing the impression in cold water prior to casting.

**Removal of Zinc-oxide and Eugenol Paste or Cement Impressions.**—Immerse in hot water and remove. Any small pieces of impression which stick to the model surface can be dissolved away using a pad of wool soaked in carbon tetrachloride.

*Fig.* 9.—Upper impression boxed in.

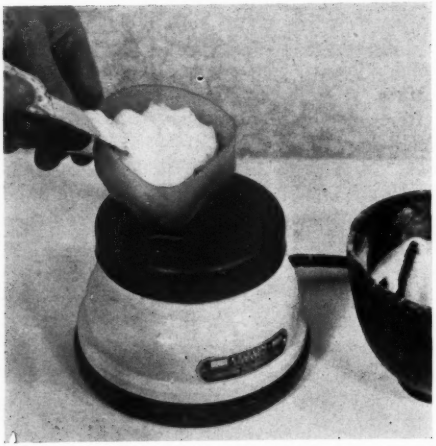


*Fig.* 11.—"Boxed-in" impression being cast on an electrical vibrator.

### 5. Casting Impressions, using the "Boxing-in" Method

"Boxing-in" an impression means forming a lidless box, using the impression as the base of the box. This is most easily done, in the case of an upper impression, by adapting a sheet of wax around the periphery of the impression and sealing it. *Fig.* 9 shows this quite clearly.

*Fig.* 10.—Lower impression with centre filled ready for boxing.

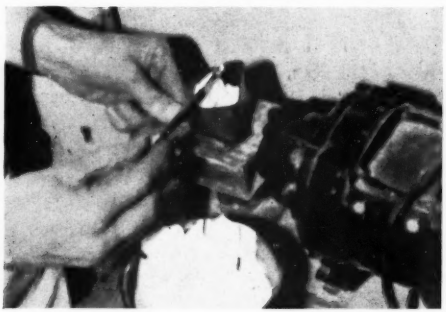


*Fig.* 12.—"Boxed-in" impression being cast on a mechanical vibrator, using a slightly eccentric cam on the end of an electric motor to vibrate a spring-loaded table.

When a lower impression has to be boxed in, it is first necessary to fill the inner aspect of the "horseshoe", using wax or plasticine (*Fig.* 10), and then adding the sheet of wax around the periphery to form the sides of the box.

**Casting a "Boxed-in" Impression.**—"Boxing-in" is normally employed when the artificial

stones are used for making a cast. There are two main reasons for this: (1) With the artificial stones a thicker mix is used than with plaster, thus vibration and confinement of the mix are essential; (2) Artificial stones take longer to set than plaster and this gives more time for excess moisture to penetrate through the mix to the top—a disadvantage when the impression is on top of the mix, but an advantage when it is below, as when "boxed in", i.e., a stronger, harder model is obtained. having a superior surface. (*Figs.* 11, 12.)

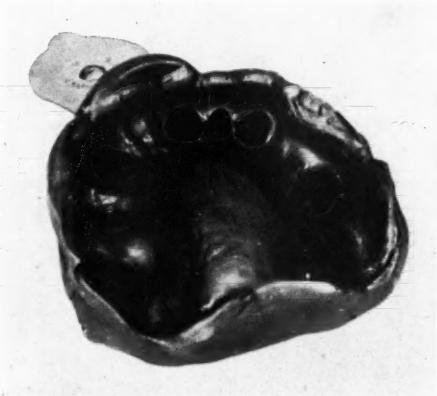


*Fig.* 13.—Partial upper impression in composition.

In casting, the mix is added slowly into the box, and is vibrated down all the time until the box is full. It is then left in this position, i.e., impression underneath, to set. When set, remove the wax box and then the impression in the usual way.

### General Notes on Casting Impressions

1. Examine the impression, especially when teeth are present. Note the position of the teeth, ensure that the model material flows thoroughly into these, and remember positions of the teeth when the time comes to remove the impression from the cast.

2. Be sure that the impression is level from front to back and side to side when on the plaster mound.

3. Cast hydrocolloid and alginate impressions immediately. If there must be any delay, store in a hygrophor. (*See* Vol. II, No. 9, p. 268.)

4. Always use a vibrator when dealing with artificial stones, and employ a thick mix and box in.

5. Work cleanly and carefully. Ensure that the mixing bowl has no scraps of set model material adhering to the inside of it and keep the bench clear of set material.

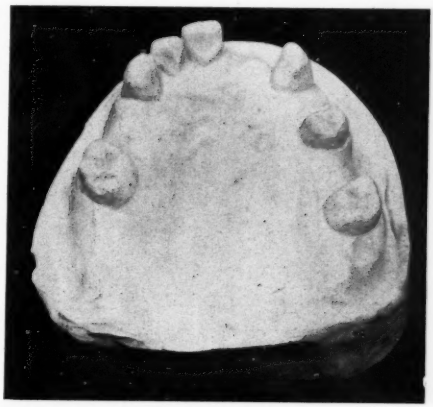


*Fig.* 14.—Cast of impression shown in *Fig.* 13 immediately after removal of composition.

6. Do not cast thin models as these fracture easily when in use. If the palate of the upper jaw has a "high vault" note this on the impression and allow for it when casting the model by giving extra depth.

### Trimming the Completed Cast

When the impression (*Fig.* 13) is removed from the cast the latter will appear somewhat as in *Fig.* 14, there being an excessive amount of plaster or stone all around the periphery. This excess is cut away and the back edge levelled off, as in *Fig.* 15. Care, as ever, must be exercised whilst doing this cutting, or parts of the cast, required to be worked on, will be destroyed. Never cut in beyond the deepest part of the sulcus and for preference err on the side of taking too little rather than too much. There are two mechanical aids to trimming models, as well as the much utilized plaster knife, which must be kept sharp in order to avoid fracturing the valuable model! One of

these mechanical aids is the plaster guillotine and the other is an electrical model trimmer utilizing a large coarse-grit wheel which is kept free from clogging by being automatically washed with running water. The model is rested upon an adjustable platform and held against the revolving wheel until the correct amount of material has been removed. (*Figs.* 16, 17.)

**Trimming Models for Orthodontic Cases.**—Models to be used for orthodontic work should be trimmed so that a "pair" of upper and lower models can be placed into the occlusion position as found in the patient and registered by the surgeon, and kept in this position when placed on the table, either on the backs of the models, or on either side of them. This means

*Fig.* 15.—Same as *Fig.* 14, after trimming.

*Fig.* 16.—Model being cut by an electrical model trimmer.

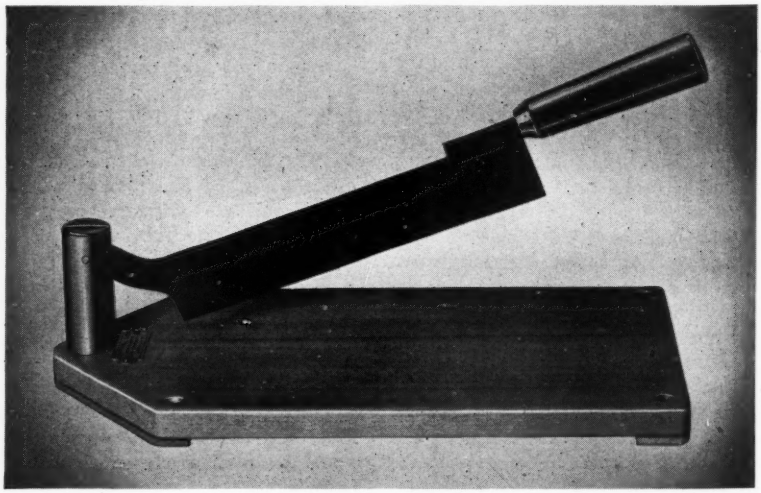


*Fig.* 17.—Guillotine trimmer.

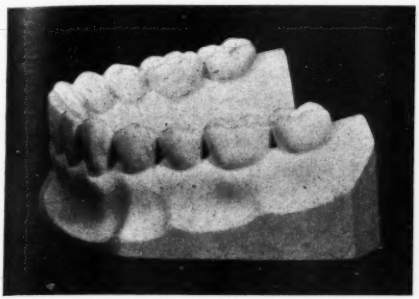


*Fig.* 18.—Model incorrectly cast and trimmed, showing excessive forward inclination.

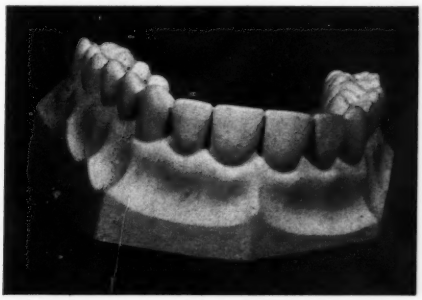


*Fig.* 19.—Same, but showing cast sloping to one side.

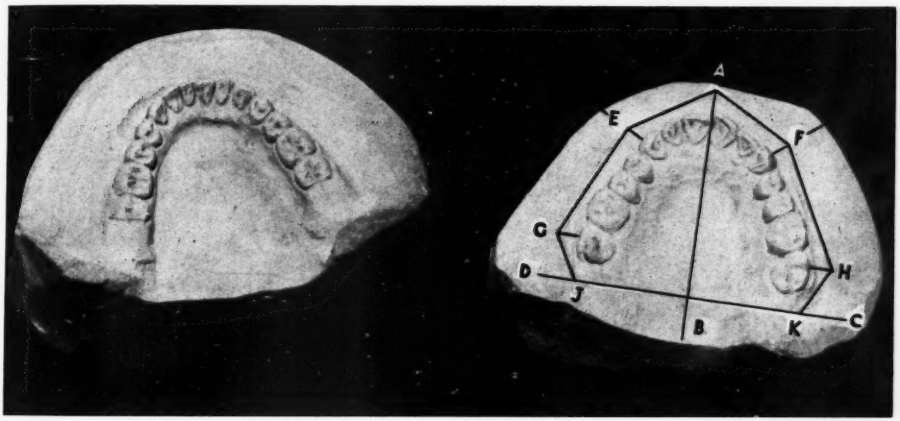



*Fig.* 20.—Lower and upper models before trimming. Upper model marked to show lines for cutting.

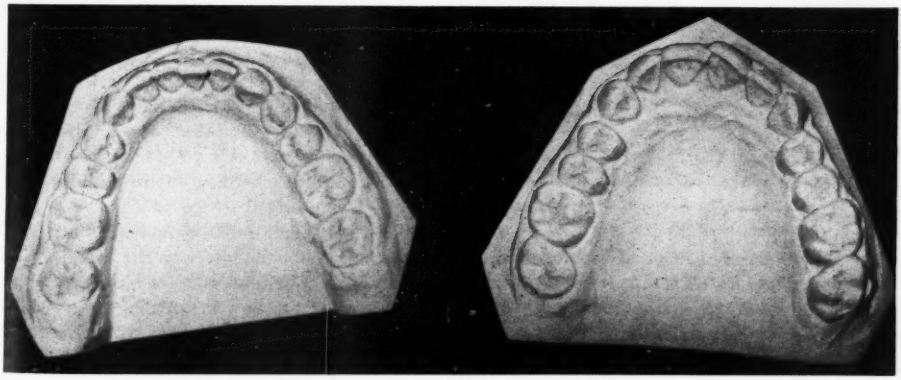


*Fig.* 21.—Lower and upper models, correctly trimmed, as a matched pair for orthodontic purposes.

of course that they must be trimmed as a matched pair, except that the upper model is cut to a point at the midline in front, whereas the lower is on a slight curve in this area.

and rear without affecting the teeth or the model.

When marking the upper model to show the cutting lines, first of all draw line A–B

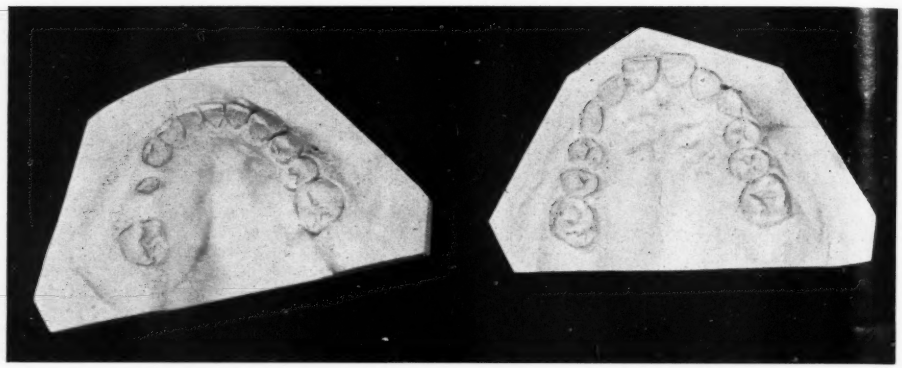


*Fig.* 22.—Models badly trimmed and unmatched and therefore of little value.

Hold the two models in occlusion to commence with, if necessary trimming away excess plaster at the back of the molar teeth to enable the correct occlusion to be found.

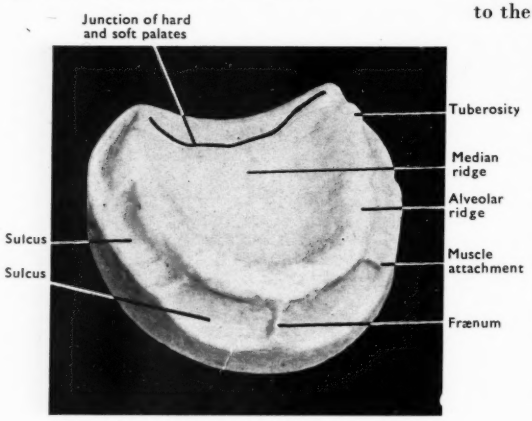



*Fig.* 23.—The "geography" of an edentulous upper model.

Note amount of overjet of either upper or lower front teeth. Mark upper model with a pencil to show approximate cutting lines, making sure that sufficient size is left so that, when trimmed, this model will allow the lower one to be cut to the same size at the sides

(*Fig.* 20). This line should travel from between the two upper centrals (unless these are badly displaced and do not represent the centre at the front) through the midline of the palate, to the back of the model.

Next draw line C–D. This is at right angles to A–B and goes just posterior to the tuberosities.

Points E and F are found by coming out at right angles from the cusp line of each canine to a suitable distance and then joining up to point A. G and H are similarly traced, but from the midline of the last tooth present, in this case the $\underline{7}|$ and $|\underline{7}$. J and K are found by uniting G to line C–D at a point on C–D level with buccal aspect of last tooth and then H to line C–D similarly.

Outline of the upper model is therefore A to F to H to K to J to G to E and back to A, cut in straight lines. Trim model to this outline.

Now once again put the models in occlusion, with the base of the lower on the bench. With a saw held flush to the side of the upper model, cut the lower to the same width. Repeat on the other side, then at the rear, etc.

Separate the models and cut the front of the lower model as in *Fig.* 21.

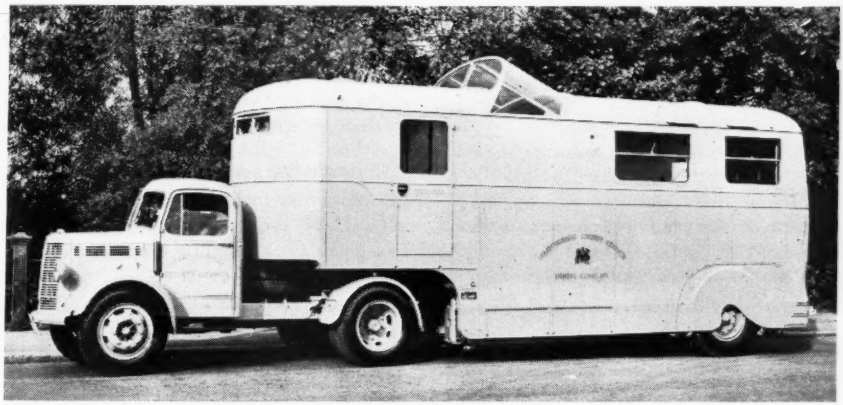
Place the models together again in occlusion, and slide each side, then the backs, along a piece of sandpaper flat on the bench finally to trim them as a pair, so that when placed together either on one side, or the other, or on their ends, they will stay in occlusion.

It will be appreciated that considerable difficulty can be experienced in marking some models for cutting owing to misplaced teeth and loss of teeth, etc. In the above I have merely tried to give an outline, so that the student will know how to commence. Time with experience provide the only ultimate method of "knowing all" or even "nearly all".

The author wishes to thank Mr. C. T. Youles for his assistance in producing the majority of these photographs.

## A NEW SEMI-TRAILER DENTAL CLINIC*

DELIVERY was recently taken by Staffordshire County Council of one of two mobile dental clinics, the bodies for which have been built by the Airscrew Company and Jicwood, Ltd., Weybridge, Surrey. The basis is a Tasker 6-ton semi-trailer which accommodates a body having an overall length of 25 ft. 6 in.



The semi-trailer dental clinic.

The body is divided into three sections, the front compartment being laid out for use as the waiting-room, the central portion as the surgery, and the rear as a combined recovery and dark room.

Entry to the waiting-room, which is 7 ft. 6½ in. long by 7 ft. 5½ in. wide, is up a timber-built portable step-ladder.

Storage space is generous in all compartments, there being two corner cupboards and a full-length cupboard in the waiting-room, a three-compartment locker and two cupboards in the surgery, and three portable storage lockers and divided lockers in the recovery room.

Access to the surgery from the waiting-room is gained by a three-step stairway. On the near side and at the rear of the surgery, there is a compartment housing an air compressor, above which there is a hand basin.

In addition to the dental chair and other specialized equipment, the appointments in the surgery include a dental instrument cabinet, a portable chair with Dunlopillo cushions, and a knee-hole desk. This section

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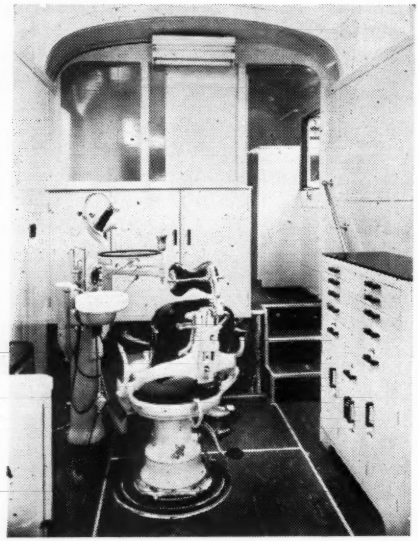
is 11 ft. 6 in. long and the headroom at the centre is 8 ft. 6 in.



View of the surgery, showing among other features the stairway leading to the waiting-room in the fore-part of the semi-trailer.

In the recovery and dark room, which is just under 6 ft. long, there is a bench-top couch with Dunlopillo and leather covering, over which is fitted a hinged wooden cover forming a work bench for the dental mechanic. This compartment also contains wash-basins with Ewart heater, draining board, and a sink. Formica splash panels are used here, as well as in the surgery.

Aluminium shutters, sliding in felt-lined channel-ways, are used when it is wished to convert this department into a dark room for filling X-ray slides and also for developing.

Ashanco ventilators are fitted in the roof of each compartment, in addition to which there is a Vecta 7 extractor fan unit towards the rear of the surgery and a second extractor fan in the recovery room. A supply of water is carried in three tanks mounted beneath the surgery floor.

The main part of the roof is comprised of Jicwood insulated sections, as used by London Transport for bus roofs, with inner and outer sections in sheet aluminium, with an expanded rubber core carried in a wooden frame. The roof is pressure bonded in one piece from cant-rail to cant-rail.

An unusual and distinctive effect is given to the roof lines by the use of a sloping light, glazed at the front and sides with toughened plate glass, the shaped top and corner panels being in clear perspex. It is arranged over the surgery section.

## R.A.F. POST OF DIRECTOR OF DENTAL SERVICES

THE Secretary of State for Air has agreed to the upgrading of the Air Ministry post of Director of Royal Air Force Dental Services, which is now to be held by an officer of the R.A.F. Dental Branch in the rank of Air Vice-Marshal. This decision brings the R.A.F. into line with the Royal Navy and the Army, in which the chief dental posts are held by a Rear-Admiral and a Major-General respectively.

The present director of R.A.F. Dental Services is Air Commodore G. A. Ballantyne, C.B.E., D.F.C., F.D.S. R.C.S., F.D.S. R.C.S. (Edin.), who has held the post since 1943. He was appointed an Honorary Dental Surgeon to H.M. King George VI in 1945 and to H.M. the Queen in February, 1952. In the first world war he was in the General Duties (Flying) Branch of the Royal Air Force and was awarded the D.F.C. while serving with No. 8 Squadron in France in 1918. He was appointed to a permanent commission in the Dental Branch of the R.A.F. in 1930 after serving in the Army Dental Corps.

## REMOVAL OF NAME

The name of Robert S. R. Murphy, 11, Norfolk Square, Glossop, Derbyshire, has been ordered to be removed from any dental list in which it is now included. The name may not be included in future in any dental list unless the Tribunal or the Minister so direct.

# THE PROCEEDINGS OF THE BRITISH SOCIETY OF PERIODONTOLOGY

*President*: G. H. LEATHERMAN, F.D.S. R.C.S. Eng.

*Hon. Secretary*: H. THOMSON, L.D.S. R.F.P.S. Glasg., H.D.D. R.C.S. Edin.
53, Portland Place, London, W.1.

Vol. III, No. 3 February, 1953


# POCKET ELIMINATION

## THE NEED FOR POCKET ELIMINATION


By **E. DESMOND FARMER**, B.A., M.D.S., F.D.S. R.C.S.

*Lecturer in Parodontal Diseases, School of Dental Surgery, University of Liverpool*


THE object of this short paper is to discuss the need for pocket elimination in the treatment of parodontal diseases. After considering the normal gingival sulcus, the manner in which its depth may be increased and the pathological processes involved, the paper will end with a brief outline of the rationale of the treatments to be described by later speakers.

The normal gingivæ are firm in consistency and pink in colour, usually filling the interdental spaces where the teeth concerned present normal contact points. The gingival sulcus is shallow and is bordered on the one side by the enamel of the tooth and on the other side by the sulcus epithelium which passes to the bottom of the sulcus where it merges with the cells of the epithelial attachment.

According to Kronfeld (1949) the depth of the normal gingival sulcus varies from zero to several millimetres. This depth may be increased either by enlargement of the gingivæ or by movement of the epithelial attachment along the cementum in an apical direction. Both these conditions may be present at the same time.

The abnormally deep gingival pocket was classified by Orban (1948) as follows:—

1. The gingival or pseudo-pocket, where the pocket is formed mainly by enlargement of the gingivæ. The epithelial attachment may be slightly displaced, but there is no bone loss.

2. The periodontal or parodontal pocket, where the bottom of the pocket is situated coronally to the alveolar crest.

3. The intra-alveolar or intra-bony pocket, where the bottom of the pocket extends apically to the margin of the alveolar crest.

Pocket formation usually leads to inflammation of the gingival tissues. Most observers consider that a gingival pocket deeper than 2–3 mm. cannot be kept clean by using ordinary oral hygiene methods. Debris and bacteria accumulate and calculus tends to be formed in the pocket. The lining epithelial cells become irritated and their breakdown products initiate the inflammatory process.

The severity of the irritation and the response of the tissues determine the extent of the lesion produced. This may vary from a barely perceptible hyperæmia to a condition where there is a marked loss of tissue, with the production of abundant pus. When the tissue resistance is high and the irritation is only slight, very little change in the tissues will be observed, but when the resistance is lowered, owing either to local or systemic causes, then the inflammatory response will be more marked.

The work of Menkin (1940, 1945, 1950) on the inflammatory process shows that the breakdown of the tissues results in the formation of substances which he termed leukotaxine, the leucocytosis-promoting-factor or L.P.F., and necrosin.

Leukotaxine is concerned with the local increase in permeability of the capillaries and results in the passage of fluid and cells into the tissues, while the leucocytosis-promoting-factor stimulates the bone-marrow to form more white cells. Menkin considers that necrosin is possibly an enzyme liberated from damaged cells which results in further cell injury and may aid in the precipitation of fibrin which, in turn, tends to block the intercellular spaces and the lymphatic vessels draining the area. The increased permeability of the capillaries and the blockage of the local lymphatics result in œdema and swelling. The normal metabolism of the cells is deranged and various degenerative changes take place.

Inflammatory changes in the gingivæ may often result in the proliferation of the cells of the epithelial attachment into the underlying connective tissue, and also along the cementum of the root towards the apex. The supporting alveolar bone may become involved and eventually result in the loss of support for the tooth.

These changes usually result in the deepening of the gingival pocket, in which more debris, bacteria, and calculus accumulate. The inflammatory process is aggravated and there is set up a continuous cycle that can only be broken by some form of treatment.

The general principles of the treatment used are well known and will only be mentioned briefly. The conservative methods of treatment aim at reducing the depth of the pocket by removing all forms of irritation, thereby reducing the inflammation and œdema and consequently reducing the size of the gingival papillæ. Waerhaug and Steen (1952) claim that a pocket may be rendered sterile by complete removal of the subgingival calculus. It is obvious that removal of the calculus will remove some of the irritation of the subgingival epithelium, but until the results of these workers have been confirmed the abnormally deep pocket cannot be regarded as being sterile. The more radical methods of treatment such as subgingival curettage or gingivectomy aim at reducing the depth of the pocket either by getting reattachment of the soft tissues to the cementum of the tooth, or by removing the outer wall of the pocket.

It is important to emphasize that whatever form of treatment is used, the area concerned should be rendered as self-cleansing as possible, and access should be made to enable the patient to clean and massage the soft tissues with a toothbrush and wooden points in order to prevent further irritation and inflammation of the surrounding tissues.

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# NON-SURGICAL REDUCTION OF THE POCKET

By **G. A. CUTHBERTSON**, H.D.D., L.D.S.

THIS aspect of the treatment of the gingival pocket will be dealt with by pressure packing and I should like to begin by mentioning the types of cases in which pressure packing is most useful.

Periodontal pockets can be classified roughly in two distinct types—the true pocket, and the false or gingival pocket. In the true pocket the base of the sulcus is usually apical to the general level of the bone edge in the area, and the tissues lateral to the inner wall of the crevice contain some bone. The false or gingival pocket is characterized by the fact that the base of the sulcus is coronal to the general level of the alveolar edge in the area, and the tissues lateral to the inner wall of the pocket are composed entirely of soft tissue. These lateral tissues may be increased in bulk as a result of œdema, associated with an obvious inflammation, or hyperplasia, where

the enlargement of the gingival mass is a result of increased connective-tissue content, associated with a relatively non-inflammatory process.

Gingival pockets and shallow broad periodontal pockets about 3–4 mm. in depth are particularly suitable for treatment by pressure packing. These types of pocket formation occur in chronic marginal gingivitis and the simplex type of periodontitis. The deep, narrow, and often tortuous pockets associated with the complex type of periodontitis are better treated by surgery, occlusal equilibration, and other methods designed to counteract the aetiological conditions which in these cases are so often more than just the local factor of food stagnation and calculus formation.

The first pressure pack which was introduced by Dunlop consisted of a paraffin base in which boracic acid, oil of peppermint, and other medicinal agents were incorporated. It was introduced into the pocket by softening in a syringe at 125° F. and injected into the interproximal crevices and spaces where it was allowed to harden. It was found that this material did not exert sufficient pressure, and nowadays the resin asbestos fibre pack, which was originally produced by Linghorn and Mackintosh during the war, is more commonly used. This pack consists of a powder which contains zinc oxide, pulverized resin, tannic acid, and asbestos fibre, and a vehicle which is either eugenol or oil of cloves with a trace of thymol. The pack is mixed by incorporating the maximum possible amount of powder into the liquid until a stiff solid mass is produced. This mass is divided into small pieces and long thin rolls and is easily handled if it is dusted with an excess of free powder. The pieces will adhere to one another under pressure, but if there is free powder on the surface they will not stick to the instrument or fingers. Any small sharp plastic instrument such as a Ward's wax carver is suitable for applying the pack.

Only one side of the mouth should be dealt with at a time, and having isolated the area, swabbed with alcohol, and dried with air, the small pieces are used first. It is important that the pocket should be filled, starting from the base and filling upwards. This is achieved by squeezing the material between the tooth and the working point of the instrument, so that it will run down between the two and into the depth of the pocket. This is done labially and lingually until the pocket is overfilled and then the labial and lingual excesses are used as a lock and prevent displacement. At this stage, if the pack is of the right consistency, there will be a definite blanching of the tissues. When all the interproximal spaces have been packed, the long thin rolls are added, moulding with finger pressure to displace the detached tissue, and this will cause additional blanching. The whole pack is consolidated by pressure from the buccal and lingual aspects and trimmed and lubricated so that a smooth, firm pack results. The patient is instructed to avoid chewing on or brushing the pack and it is left in place for two days. When it is removed it will be found that there has been a recession of the soft-tissue wall of the pocket.

The pack acts mechanically by separating the inflamed soft tissues from the dental wall with its subgingival calculus and by overspreading and protecting these inflamed surfaces with a non-irritant covering. Both of these conditions promote more rapid healing of the ulcerated cervicular surfaces. Reduction of gingival swelling takes place and it is a debatable point whether this results from pressure atrophy or merely from putting at rest the mobile soft tissue which has become inflamed and œdematous by its contact with the rough calculus on the dental wall. Clinically, however, there is no doubt that reduction of the soft-tissue mass does in fact take place. By opening and in fact saucerizing the pocket orifice subsequent scaling is greatly facilitated and can be carried out with less trauma to the soft tissues. The pack acts as a seal, preventing saliva and food particles from entering the pocket. As a splint it prevents movement and helps the normal repair of inflammation. The asbestos fibre by its bulk maintains soft-tissue displacement. The bacterial content of the pocket is reduced by the zinc oxide, eugenol, and thymol. The resin

makes it adherent to the teeth, and the tannic acid helps to keratinize the surface epithelium.

When all the œdema and inflammation have subsided and the subsequent scaling has been completed, it will be found that the regular use of wood points will maintain the resolution which the pressure pack has produced.

Keratinization of the interproximal soft tissue is rapid because the epithelial covering has been maintained throughout.

# SURGICAL GINGIVECTOMY IN POCKET ELIMINATION

By **FREDERICK HOPPER,** B.D.S., F.D.S. R.C.S.

*Lecturer in Periodontal Diseases, University of Durham.*

WHERE periodontitis exists the depth of the pocket varies around the circumference of the root of each tooth involved, and is in adults almost invariably greater in the interproximal area than on the lingual or labial aspects of the tooth. This variation may be so marked that the pocket extends well below the long alveolar crest and this plunging extension of the inflammatory process without simultaneous loss of the supporting bone has been given by Goldman the title of 'intra-bony pocket'.

The cementum exposed by chronic periodontitis is dead, but the tissues below the epithelium lining the pocket, especially the bone and connective tissue, while showing evidence of chronic inflammation and perhaps of reduced vitality are *not* dead and are not a breeding ground for infecting organisms. This has been clearly demonstrated by Fish, who emphasizes the superficial nature of the infection and the rapidity with which organisms driven below the surface are eliminated.

Theoretically it is possible to obtain reattachment of the gingival tissues to the root of the tooth after removal of calculus, planing of the cementum surface, and curettage of the epithelium lining the pocket. Consider the parallel case of an apicectomy, where the blood-clot fills the space created in the bone around the resected root and complete organization occurs with bone regeneration and fresh deposits of cementum sealing the apex. In practice I do not believe such a result is possible in a periodontal pocket except in an intra-bony pocket of recent formation or in the imaginations of over-enthusiastic periodontists. The odds against such a result, with the probability of oral contamination, trauma to the soft tissues, and downgrowth of the epithelium before re-attachment can occur, are all too great to make it a worthwhile proposition.

The only success I have had in this direction has been in the treatment of acute periodontal abscesses which have burst through into the gingival crevice. By scaling and curettage in such a case I have reduced the depth of the pocket from 12 to 4 mm.

This does not mean that pockets cannot be reduced in depth by scaling and such procedures as pressure packing if the œdema of the gingivæ is a marked feature of the condition. By such means pockets can be reduced in depth but not eliminated.

In the use of surgery to eliminate the periodontal pocket the epithelial attachment is accepted at its existing levels, the outer wall of the pocket is obliterated to leave a crevice as near zero as possible and a marginal contour as streamlined as possible. No attempt is made to interfere with the epithelial attachment, with the so-called granulation tissue of the interproximal area, or with the alveolar bone. It is an operation which is not difficult to carry out, is not unduly time consuming, and in which the prognosis is reasonably certain.

Gingivectomy is not an end in itself but must be regarded as forming only a part of the complete treatment for periodontal disease, including diagnosis, scaling, occlusal balancing, and oral hygiene. The technique I use is not original or exclusively the best one, but in my hands has proved uniformly successful.

The armamentarium is simple:—

Mirror.

Plain probe, Briault's probe, and a graduated probe.

Pair of Crane-Kaplan pocket markers home-made from tweezers.

Blake knife with No. 15 blades.

Six double-edged knives—with oil stone.

Curved scissors.

Fine notched forceps.

Cumins scaler.

Double-ended flat-bladed plastic instrument.

After anæsthesia has been obtained, using xylocaine 2 per cent with adrenaline, the patient is draped with a sterile towel, but it is realized that, beyond this, aseptic working conditions are unattainable. Contamination is nevertheless kept to a minimum.

The pocket depths are assessed and the pocket markers used if necessary, although with judgement and the use of a probe the line of incision can be outlined without elaborate marking methods. The initial cut is made, using a Blake knife, from the bottom of the pocket to a point as near to the apex of the tooth as possible and beginning at the most posterior part of the area to be treated, on the labial or buccal aspect. Little attempt is made to contour the incision as the blade is carried around the mouth. Double-edge blades are now used, driving them into the interproximal spaces at the appropriate angle and then peeling off the labial festoon in one continuous sweep.

The process is repeated on the lingual or palatal aspects, with difficulty of access making the approach somewhat less easy. Any small tags of tissue remaining are removed with the scissors or a Cumins scaler, the area is sprayed with hydrogen peroxide solution, which effectively checks bleeding, and packing is carried out immediately. The pack consists of a simple mixture of zinc oxide and eugenol of a thick, firm consistency into which cotton-wool is incorporated, the whole mass being divided up into small pledgets for insertion. This is carried out using the blades of the plastic instrument, forcing the pack first into the interproximal spaces and squeezing the excess between finger and thumb to form a connecting link with the next interdental space. On completion, Vaseline petroleum jelly is smeared over the pack and the patient dismissed for seven days. At the next visit packs are removed, scaling and some polishing carried out, and the patient instructed in the use of soft balsa-wood points for immediate use.

A check after two weeks will enable the operator to see if any interdental space is not receiving friction from wooden points. The application of phenol liquefactum will effectively control what is now true granulation tissue.

The operation may be carried out on an area including up to the whole upper or lower jaw in one visit without causing undue discomfort, although the full mouth may be done if urgency is a necessity. In this connexion, while I have never regretted removing too much tissue at operation, there have been occasions when I have not removed enough, as evidenced by flat platforms at the gingival margins and incomplete obliteration of the pockets. This fault of incomplete surgery is common to beginners.

Gingivectomy is most successful in those cases in which no periodontal pocket is present. I refer to the adolescent or young adult with hyperplastic changes in the gingivæ, associated with the endocrine disturbances of puberty or such local factors as lack of lip seal. Here the epithelial attachment has not begun its migration towards thep aex, the pockets are 'pseudo-pockets', and respond extraordinarily well to surgery.

Next to them the outlook is most satisfactory in cases of horizontal periodontitis if the surgery is adequate, scaling is complete, and the patient's co-operation in oral hygiene is obtained.

In cases of vertical periodontitis the outlook is not so good, but I believe in obtaining a space between the teeth which the patient can maintain in a clean condition. Bone lost in such a condition cannot be replaced, but I feel that surgical gingivectomy offers the most satisfactory form of treatment if extraction is to be avoided.

# ELECTROSURGERY FOR GINGIVECTOMY

By **P. A. TROTTER**, B.D.S., H.D.D.

(*Lecturer in Periodontia, King's College Hospital Dental School*)

HIGH-FREQUENCY short-wave electrosurgery is becoming more popular for use in minor oral surgery. Gingivectomy, from the removal of a single papilla to whole mouth, may be performed by this method. It has many advantages over the scalpel. The monopolar electrode (no indifferent electrode is necessary) is an ordinary smooth nerve-canal broach suitably trimmed and bent at an angle and replaces the various knives which require sharpening and are of course expendable. A sterile incision is made which eliminates spreading the infection. Less local anæsthetic and adrenaline are needed as hæmorrhage is reduced, and this in itself reduces the time of operation and packing. The film-like arc, especially designed for delicate use, cause little tissue penetration with minute sloughing, and so an accurate forecast of the extent of tissue removed is easy. Healing is rapid and uneventful. These advantages, together with others, render the operation less tedious to patient and operator.

*Fig.* 1.—Coagulation mark made on buccal gingiva by manipulating instantaneous foot switch of electrothermy machine. (Similar marks made along $\overline{3}$ and $\lfloor\overline{3}$ area buccally and lingually.)

*Fig.* 2.—Continuous incision with right-angled needle attached to short-wave electrothermy unit. Incision made with selected arc. (Repeated on lingual aspect of the area.) Note lack of hæmorrhage.

The stages of the operation of gingivectomy by short-wave electrosurgery are similar to those employed when a scalpel is used. The pockets are measured and marked by the electrode (*Fig.* 1) and the incision made by severing the tissues with the arc (*Fig.* 2). It is considered advisable to make the incision at right angles to the tissue and corresponding to the bottom of the pocket. After the strip of gingivæ has been removed (*Fig.* 3) the resulting shelf-like edge is contoured with the arc

*Fig.* 3.—Labial tissue almost removed. Note lack of hæmorrhage and clean incision.

*Fig.* 4.—Tissue removed buccally and lingually. Arc electrode used for deflecting, contouring, and producing interproximal sluice ways. $\overline{1}\lfloor\overline{3}$ completed.

as one would wax up a denture (*Fig.* 4). A pack is applied and is removed after seven days. Then gentle massage by wood points and a brush of suitable texture is commenced. A final scale and polish, when the area has hardened, completes the operation (*Figs.* 5–7). (*See British Dental Journal*, 1951, Jan. 2 and April 17, for complete details of the operation.)

Should scaling be pre- or post-operative or both? Personally I prefer all my cases to have a scaling before final treatment planning, even if it is thought that a gingivectomy is essential; also many once-time apparent gingivectomy cases are truly apparent and the mouth after scaling and home care is so improved as to make it almost unrecognizable (*Figs.* 8, 9).

Questions may be asked as to whether one can cause damage to the teeth or bone when using electrosurgery. The fundamental facts are that the machine must be of the correct design and output to give the desired delicate film-like arc. Also practice is required, for as with any other technique the operator must know what he is attempting to do and how to accomplish it. Therefore I consider it wise to teach students at first to perform gingivectomies with a scalpel in order to establish the basic principles. At this Dental School they then use the M.S.5 unit thereafter. I have used the machine now for five years and the

*Fig.* 5.—The area one week later.

*Fig.* 6.—Before gingivectomy by short-wave electrosurgery.

*Fig.* 7.—After gingivectomy by short-wave electrosurgery.

*Fig.* 8.—Before scaling.

*Fig.* 9.—After scaling.

students have been doing so for the past three years. In the many cases treated there have not been any complaints of pulpitis and only two cases of slight necrosis of the tip of the alveolus. The first case I managed to do when the machine was in its infancy and before refinements had been made. The second case was accomplished by a student who "asked for it", by keeping the arc in one position for too long, for the speed at which the electrode is moved through the tissue is important: too rapid a movement will cause quenching of the arc; too slow movement will cause unnecessary destruction of the tissue. The desired rate of movement is approximately the same as when a very sharp scalpel is used. Experience shows that the control of the current intensity to meet the tissue resistance (never send a man on a boy's errand!), the speed of movement of the electrode, and manual dexterity determine the success of the operation. However, the technique is easy to learn.

Post-gingivectomy treatment is important and the co-operation of the patient is essential, as indeed it is with any periodontal treatment. The interdental area is most prone to relapse and the use of wood points and a brush, the texture and arrangement of the fibres of which give flexibility with firmness and penetration without harshness, is recommended. Such a brush is now obtainble (*Figs.* 10, 11). Indeed the trend away from very hard and hard nylon brushes is to be welcomed by periodontologists.

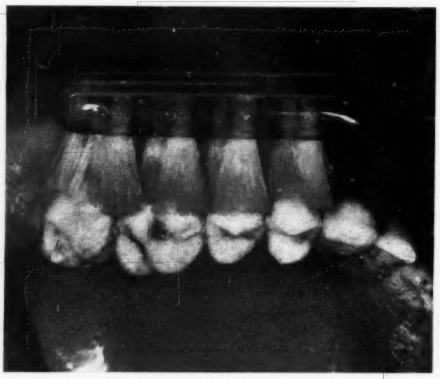


*Fig.* 10.—New type of brush, showing coverage and penetration of fibres

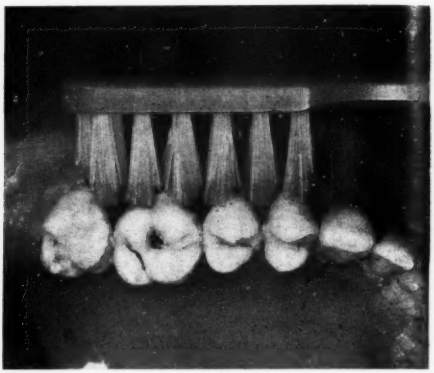


*Fig.* 11.—Usual type of brush, for comparison.

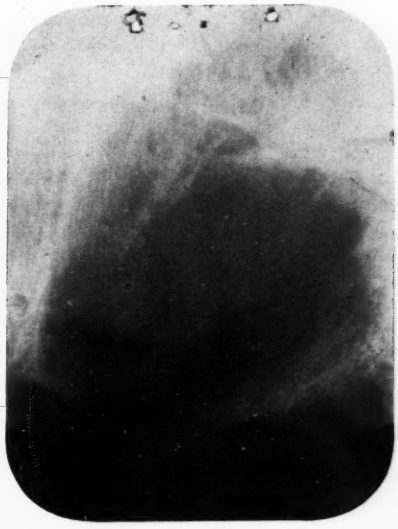
There falls into the category of "electrosurgical treatment of periodontal disease" such methods as the use of the actual cautery both for seering tissue and stab cautery, also bi-polar electro-coagulation, and although one would not be wise to attempt a large-scale gingivectomy with the former the latter was to some extent popular a few years ago. In certain hands it may be beneficial, but the general results are not impressive. Whereas in both these methods control of penetration and sloughing is empirical, in monopolar high-frequency short-wave electrosurgery they can be determined by the operator and one is able to use the arc for incising tissue. It has not been possible to cover all aspects of electrosurgery in the time available, but it has just afforded sufficient coverage to encourage a discussion.

*Issued with "The Dental Practitioner", February, 1953, Vol. III, No. 6*

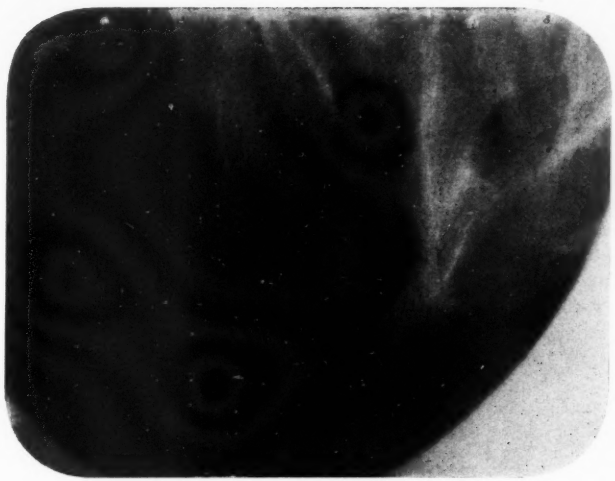
ADIOGRAPHIC CHART No. 9.

# CYSTS

*Case* 1.—Cyst over $\underline{|2}$.



*Case* 2.—Cyst in $\underline{2\,1|}$ area in edentulous mouth.



*Case* 3.—Cyst in edentulous mouth, anterior area.

The diagnosis of a dental cyst depends to a large extent on good radiographic evidence. The diagnosis may be made on the signs and symptoms presented by the patient, but the extent and type of the cyst will be seen by a radiograph.

## *SOCIETY NOTES*

### INSTITUTE OF BRITISH SURGICAL TECHNICIANS (INC.)

**Dental Section**

A LECTURE will be given by Mr. C. A. Munday, L.I.B.S.T., on "The Heat Treatment of Cast Golds", on Tuesday, Feb. 17, 1953, at 6.30 p.m., at the Eastman Dental Hospital, Gray's Inn Road, W.C.1. Admission tickets are obtainable on sending stamped addressed envelope to the Institute of British Surgical Technicians, 6, Holborn Viaduct, E.C.1, or through members of the Institute.

Mr. Ronald V. Tait, B.Sc., L.D.S. R.C.S. (*left*), and Mr. H. Lester Leech, B.D.S., L.D.S. (*right*), speaking at the debate on "Fixed and Removable Appliances in Orthodontic Work", held at the Eastman Dental Hospital on November 11, 1952, which was reported in our January issue.

### DENTAL RADIOGRAPHY

THE Ilford Limited Department of Radiography and Medical Photography, Tavistock House North, Tavistock Square, London, W.C.1, will hold two courses in dental radiography and darkroom procedure, the initial course on Thursday and Friday, March 26 and 27, and a second course for nurses who have already attended the first course on Tuesday, March 31. Attendance is from 10 a.m. to 4.30 p.m. each day and a programme can be obtained on application. No fee is charged for either course.

### TO MOTORING ENTHUSIASTS

**United Hospitals and University of London Motor Club**

THE United Hospitals Motor Club, as it was then called, was founded in the early thirties to provide motor sporting activities for enthusiasts on the staff of London Hospitals. It opened its portals to the whole University in 1935 and was recognized as the University's official motor club. It gained a reputation, before the war, for reasonably priced, well-organized events and was among the first clubs to organize sports car racing on the Manufacturers' Circuit, at Donington Park.

Activities lapsed, of necessity, during the war years and were re-started at University College by a band of keen members who are, fortunately, still at hand. The Club's primary purpose is to provide cheap motoring and social events for impecunious students and graduates of the University. To this end, there is no entrance fee and the annual subscription is 10s. 6d. The committee aims at providing at least one meeting per month during term time (film shows and lectures are generally given at University College) and three classic dates during the year—Rally, Speed Event, and Driving Tests. In addition, Night Navigation Trials and Point-to-Point events are organized and numerous invitations received to other clubs' meetings.

A Club tie and a car badge are available, particulars of which can be obtained from the Secretary. The Club is recognized by the R.A.C., and motor-cycle members affiliated to the A.C.U.

Those interested who are students or graduates or on the staff of the London University or a London Hospital should contact the Hon. Secretary, D. Bicknell, Esq., 10, Ashburn Place, S.W.7.

Even if you do not possess a vehicle you are still cordially invited to join, particularly if prepared to help with events, transport to which can generally be arranged.

# ABSTRACTS
## *from Other Journals*

### Vertical Dimension must not be increased

The relative positions of upper and lower teeth in pronouncing sibilants are taken to indicate a separation which cannot be altered. This separation is termed the "closest speaking space". The association in some patients of a deep overbite with a minimum "closest speaking space" is interpreted as meaning that the common conception of "freeway space" is invalid. Overbite is confused with overclosure.—SILVERMAN, M. N., (1952), *J. pros. Dent.*, **2**, 188.

### Gingival Massage

Gingival massage is often used for the prevention or treatment of certain types of periodontal disease. The principal controversial statements relating to the use of massage have been: (1) that there is a lack of scientific proof of its usefulness; (2) that there is no logical rationale for its use; and (3) that it is possible for massage to lead to subacute bacterial endocarditis—a disease that had, until recent years, an extremely high mortality-rate.

The arguments for and against gingival massage are discussed in detail, and the conclusion is reached that gingival massage as performed by the toothbrush during effective cleansing procedure is desirable both from the preventive and from the curative standpoint. Furthermore, it is concluded that the remote theoretical possibility that gingival massage with the brush may lead to subacute bacterial endocarditis in susceptible individuals is not great enough to warrant dentists discarding gingival massage as an important preventive or curative measure.

It is pointed out that, though the cleansing action of the brush is important, its massaging action under certain conditions plays the greater role. The latter is evidenced particularly in the treatment of such gingival enlargements as those caused by dilantin sodium therapy and by pregnancy, in both of which the hyperplasia is reduced essentially by the toothbrush. That it is the massaging action in these instances rather than the cleansing is evidenced by the fact that the cleansing possibilities in such cases are comparatively nil, since the bristles cannot reach effectively into the great depth of the pseudo-pockets resulting from the excessive growth of the gingiva.—HIRSCHFELD, ISADOR (1951), *J. Amer. dent. Ass.*, **43**, 290.

### The Problem of Impacted Teeth in Orthodontics

Methods are described for dealing with impacted teeth with special reference to maxillary canines. The more usually impacted teeth are listed, and in the cases of first permanent molars and second deciduous molars, either of which may be impacted against the other, adequate space must be maintained for the erupting second premolar when the second deciduous molar is removed, i.e., the first permanent molar must be held in place. When the second deciduous molar is impacted it appears to have sunk into the parodontal tissues. In reality, of course, these tissues have continued to grow round the impacted tooth, which is ankylosed, the ankylosis having been brought about by trauma or infection. These cases must never be allowed to progress to the stage at which the first permanent molar tips over the second deciduous molar.

The author states that the orthodontist cannot consider a case completed if adequate space has not been allowed for the eruption of the third molars. Indications are given for the removal of the second molar to facilitate the eruption of useful third molars, but not to ease the technique of removing the latter teeth. If a supernumerary tooth is preventing the eruption of a maxillary central tooth, the oral surgeon may decide to wait until the former erupts into a more favourable position if this is deeply placed and if operation would jeopardize the structures in the incisor canal.

Much of the foregoing may be familiar to the general practitioner but there are some very useful points when the maxillary canines are dealt with. At the outset a decision has to be made whether or not the canine can be brought

into the arch before the first premolar, or even the deciduous canine, is removed. For this purpose dual-plane radiographs are necessary. In grouping these impactions it appears that the more vertically placed teeth are the most amenable to treatment, while those lying labially to the arch in a horizontal position cannot be brought into alinement because of the chafeing a traction appliance would cause to the upper lip. All impacted and buried canines require the covering tissue removing and the wound packing until healing has occurred. Sometimes this is all that is required, but mostly an appliance will have to be fitted by which means the tooth can be pulled or pushed into place. In pinning the canine tooth, care must be exercised, possible dangers being death of the pulp if the pin is too deep and caries occurring around the pin.—ADAMSON, K. T. (1952), *Aust. J. Dent.*, **56**, 74.

# BOOK REVIEW

**A MANUAL OF ORAL SURGERY.** By W. HARRY ARCHER, B.S., M.A., D.D.S., Professor of Oral Surgery and Anæsthesia, School of Dentistry, University of Pittsburgh. $6\frac{7}{8} \times 10$ in. Pp. 643 + xiv, with 1036 illustrations. 1952. Philadelphia and London: W. B. Saunders Co. 75s.

THE author describes this work as a step-by-step atlas of operative techniques intended for the oral surgeon, general dental practitioner, and the dental student. The term "atlas" is well chosen; the book is profusely illustrated with very clear photographs, which are designed to replace much descriptive text.

Of necessity the scope of the book is large, and emphasis has been laid on the essentially practical aspects of all the conditions and surgical procedures described.

There are twenty-eight chapters, the first twenty-four of which are concerned with various conditions and associated operative techniques. The last four are concerned with sterilization methods, oral surgical procedures in hospital, hospital dental care and education, and the legal aspects of dental practice. These are written with particular reference to conditions in the U.S.A.

The chapters vary considerably in length and content. Some of them are contributed by other authors. These include a short chapter on cysts of the oral cavity by Hamilton B. G. Robinson, which is a brief classification of cysts of the jaws with short aetiological notes on each type. The treatment of cystic conditions is dealt with in the following chapter in a comprehensive manner.

A short chapter entitled "Heat and Cold Indications in Oral Therapy" includes two pages devoted to pathology, which is almost the only reference to pathology in the book.

Other contributed chapters are on "Oral Prosthesis in Rehabilitation of Cleft Palate Patients" by Cloyd S. Harkins, and "Radiation Therapy of Carcinoma of the Oral Cavity" by Samuel G. Henderson.

This is a work of great value to all practising dental surgeons as well as to those specializing in oral surgery. The only criticism which might be made is that too many case histories are included, many of them being very similar in nature. However, the book is very readable, very well illustrated, and worthy of close study by dental surgeon and student alike.

D. F. S.

## DENTAL BOARD OF THE UNITED KINGDOM

### Sixty-third Session

AT the sixty-third session, held Nov. 12 and 13, 1952, several disciplinary cases were considered.

The Reports of the Dental Health Education, Education, and Finance Committees were presented. For the year 1953 it is estimated that the income and expenditure account will show a surplus of £5200; but it is noted that these estimates make no provision for expenditure which would have to be incurred should the Dentists Bill become law in 1953.

*S.I.M.A. Supplement to*
*The DENTAL PRACTITIONER* *Vol.* III, No. 6

OFFICIAL SUPPLEMENT OF THE

# SURGICAL INSTRUMENT MANUFACTURERS' ASSOCIATION (INC.)

## DENTAL LABORATORIES SECTION

*Chairman*: E. G. EMMETT, F.I.B.S.T.
*Administrative Offices*: 6, HOLBORN VIADUCT, LONDON, E.C.1
*Telephone*: CITY 6031

Vol. II, No. 11 February, 1953

*Editorial Committee*: D. M. BEAUCHAMP; H. J. POTTER, F.I.B.S.T.

## EDITORIAL

AN up-to-date appreciation of the value of ethical conduct seems to be characteristic of the attitude of the men of other countries. Some British dental technicians, employers and employees, by their desire to intrude upon what is legally the preserves of the dentist, weaken our ranks and influence, lessen our prestige, and prejudice good relations with the profession.

In our present advanced state of social development it would appear unreasonable for even a mature solicitor's clerk to claim a right to practise, even though he were able to do the work as well as his principal. An experienced seaman who has gone to the trouble of studying navigation is as capable of taking charge of a ship as her master, but until he is certificated by the Board of Trade, it is illegal for him to do so.

S.I.M.A. adherence to the principle of members obliging themselves to avoid unqualified denture-making competition with the dental profession has led to the loss of individual members and the secession of one branch. This is very regrettable for: (1) there is no other organization represented on the National Joint Council to which they may belong; (2) at this time more than ever before it is important for all dental technicians to lessen the number of associations rather than increase them; and (3) as we sense the general thoughts of men in other countries still further, it seems likely that dilution of the qualified dental profession with prosthetists is nowhere one of the aims.

* * *

The account of the meeting with the representative of the Israel Dental Laboratories Association should be noted as an illustration of the extent to which we must be alive to the cultural and business value of interchange of experiences with those of other lands.

* * *

The health of any organization is reflected in the sociability of the members and friends, who welcome the opportunity to join in functions at which they may honour their guests. We forecast with confidence the pleasure which our third conference week-end will provide for old and new acquaintances.

## DENTAL LABORATORIES IN ISRAEL

WORTHY of recording in our pages as a past S.I.M.A. activity is the consultation in London last month between those responsible for this Supplement and a delegate from Israel in the person of Mrs. Weissmann, wife of a very capable technician, partner in the largest laboratory in Tel Aviv, and co-enthusiast for the national association and good international

relations. Mr. Hermann Weissmann in 1940 was a founder member of the Palestine Association which held congresses in 1944 and 1947 in Tel Aviv, and changed its name in 1950 to the Israel Dental Laboratories Association.

The organization has three branches, in Tel Aviv, Jerusalem, and Haifa. The number of members was given as six hundred, though it was a little difficult to decide whether these were actual subscribers or the estimated number of laboratories in the country at the present time.

Much of the prosthetic work is done in the Cupath Cholim which appeared to correspond to our hospital clinics, and is paid for by something similar to our social insurance or Hospital Savings Association. Private practice, however, claims a satisfactory share.

The dental surgeons have their organization in the Israel Dentists' Association; there is the Association of Dental Practitioners who seem to correspond to our Dentists 1921; and the employed technicians are protected by the comprehensive workers' union.

Judging by photographs, laboratory arrangements seem convenient, modern, and congenial: there is no piped gas, and gaseous fuel is obtained from paraffin via the primus stove when necessary. Electric appliances of all kinds are therefore very popular.

Gold, white gold, and pressed steel are the metals in main use; it appeared that our friends were not completely happy with chrome-cobalt, but in repeating this it must be emphasized that all this information was elicited in the course of an informal conversation during supper, and it may be that other representatives would have other experiences.

We were able to impart comparable information about the set-up in the United Kingdom, and it seems that generally the conditions are similar. Mrs. Weissmann was anxious for us to understand that in her young virile country all work very hard.

The arrival in Israel from Great Britain of Mr. and Mrs. Rothstein was referred to with much enthusiasm, and we heard how the Tel Aviv members organized official receptions and dinners, and planned visits to laboratories in the other cities. On each occasion Mr. Rothstein spoke, but his main speech was given at the association rally in Tel Aviv, later translated into Hebrew and sent around to all the members.

This young body, by its achievements in so short a time, in the converting of chaos into controlled arrangements by insuring a minimum living, supervision of price competition, and establishment of permanent contact between laboratory men, deserves our admiration and goodwill.

# A MEMBER'S OPINION OF C 37

We have for some time been using the new denture base Co-Pol C37, and have been very impressed with the results obtained. Thinking it might be of interest to readers to hear of our experiences, we send the following notes.

At first we ran into difficulty, but soon realized that we were too ready to use the same methods which were found satisfactory with ordinary acrylic denture base. The C37 requires a different technique which, once understood, results in excellent dentures being consistently produced.

The advantages these dentures possess compared with those made from the former material are numerous. They fit perfectly, and this feature alone will help a great deal to eliminate median line fractures, as there is tissue support over the whole of the fitting surface; obviously retention will be good with such marginal sealing. If the dentures are accidentally damaged they may be invisibly repaired without fear of spoiling the fit. This property is of great value, as previously we felt that any acrylic denture we repaired was always warped, however carefully the work was done.

Last, but not least, there is a considerable saving in fuel costs.

The vital thing to understand is that C37 has in its monomer the necessary constituents to achieve early polymerization without heating, therefore the use of the liquid requires special care: more spatulation is needed than was previously the case.

Our technique is to pour more powder than before into the monomer, and then to stir vigorously. The mix is left for five minutes, then stirred again for each succeeding five minutes for half an hour. Failure to do this may result in lumps forming owing to premature local polymerization. There is no harm in stirring the mix so often, as it takes up to an hour to get the material to a stage ready for packing. It must be packed in a very stiff state so as to get good pressure to avoid porosity, and herein lies another danger. If it is packed in stiff condition without treating the acrylic teeth in any way, there is a risk that they will come off the denture base. It is necessary to paint the teeth in the flask with a wet mix of C37 just prior to packing the dough.

After packing and testing, the cases must be left for at least an hour in the press before any attempt is made to complete the cure. It will readily be appreciated that exothermic reaction will be rapid owing to the catalyst in the monomer, and therefore thick dentures will cure more quickly than thin ones, a thing one would hardly think possible, but which in itself is an advantage, as it is almost impossible to get porosity in thick sections, for the cure originates from the centre of the mass. Care must be taken with thin sections as they require longer curing, up to four hours in some cases.

The method of curing is very simple, it being only necessary to put hot water into any sort of vessel sufficient to maintain the flasks at a temperature of about 40° C., and to leave for any time longer than an hour. Cooling and deflasking are carried out exactly as before.

A final point of interest is that the shade of acrylic teeth is not affected by this treatment.

We disclaim any interest in the firm which manufactures this material, but consider it a great step forward in dental plastics.

W. G. DITCHBURN.

# A DECADE

MR. GEORGE W. TAYLOR, of the Birmingham branch, co-founder and secretary since its formation, sends the following historical account and assurance of loyalty.

It is ten years, ten of the most fluctuating years in the history of dentistry, since Birmingham Dental Laboratory Owners' Association was born on an October Saturday afternoon in 1942 at the Arden Hotel in New Street. A decision was taken to form an association, and arrangements made for a subsequent meeting with the object of appointing officers.

At this meeting by common consent Mr. Fred. Dollman was asked to take the chair in recognition of his pioneer efforts.

Barely a month after the inaugural meeting the association saw fit to hitch its waggon to the growing influence of S.I.M.A. Dental Laboratories Section, of which the chairman was already a committee member, and all present joined *en bloc*.

A reciprocal gesture from London invited our acceptance of branch status, the first of the many branches to be formed.

This was at the stage of the war when to obtain rubber was difficult and plastic was fast becoming the new denture medium, but thanks to the guiding hand of the main committee, and the newly found spirit of co-operation among the laboratories, this period of change was to be the beginning of better things.

It was natural that with the greater activity the number of members slowly increased, and soon to their great pleasure one was enlisted from twenty miles away. We pay tribute to those members who now regularly come to the branch meetings from outlying districts.

There came the time when Mr. Dollman found it necessary to resign the chairmanship, and Mr. Gerald Cross undertook this office; his devotion to the work, allied to his administrative ability, not to mention his quiet assuring personality, explain his undeniable popularity at the Birmingham branch. Mr. Cross shares with Mr. Taylor, the secretary, the honour of unbroken service to the committee since its inception.

Other names to mention are those of Mr. Peter Davies (one of three Davies in our assembly and none related) who has done valuable work on the educational side in addition to acting as vice-chairman and London representative: Mr. Andrew Brown and Mr. Percy Dodson have been faithful committee men, and from time to time have examined City and Guilds of London candidates. Mr. W. Fletcher has taken up duties for which he seems well fitted, and Mr. A. Gardiner, of Coventry, has already made his presence felt here and in London. Whenever there has been a job to be done, we have always been able to find the right man to do it.

A highlight of last year's calendar of events was our entertainment as guests at the Wordsley maxillo-facial centre—where we admired the examples of work shown, and profited by the technical information imparted by the staff. Two lectures also will be prominent in our memories, one by Professor J. Osborne on "Some Aspects of Casting", the other by Mr. S. A. Lammie, L.D.S. R.C.S., on "Clasping of Partial Dentures". Other events are being arranged by our capable Peter Davies.

The Birmingham branch members have always given opinions on matters when requested to do so by the main committee; these opinions were possibly not always popular, but they were the result of earnest consideration for the best interests of the association as a whole, interests which we hope to serve for many another decade.

Birmingham Branch S.I.M.A. (Dental Laboratories Section)

*Standing, left to right* : Committee : W. T. Fletcher, Geo. Taylor (*Hon. Sec.*), Gerald E. Cross (*Chairman*), E. Simkins, A. Gardiner, A. P. Brown; other members : A. G. Bonner, jun., A. G. Bonner, sen., D. Byng.

*Sitting*: C. J. Plant, N. Davies, T. Ferris, C. J. Moran, E. O. Nicholls, C. P. Belward, P. Davies, Leslie Davies, W. C. Berry.

"If an instructor is skilled in the task he is teaching, it may be impossible for him to remember the difficulties he encountered when he was a learner years ago."—ALBERT WALTON.

# NEWS FROM HEAD OFFICE

*Revision of N.J.C. Booklet.*—The recommendations for the revision of the N.J.C. booklet submitted by Mr. S. G. Davis on behalf of S.I.M.A. have been considered by the Revision Committee and a few minor amendments have been accepted, in addition to those made necessary by decisions of the N.J.C. since the printing of the original booklet. The definition of Grades I and II is still under consideration, and S.I.M.A. has been asked to produce a formula which would be acceptable from its point of view.

The clauses dealing with "Holidays with Pay" and "Wages during Sickness" are still under consideration by the constituent bodies of the N.J.C.

*N.J.C. Disputes Committee.*—The question of the procedure and jurisdiction of the N.J.C. Disputes Committee has been under consideration owing to some difficulties which have recently arisen, but the view taken by the Main Committee was that alterations might result in further troubles and that it would be better to retain the present procedure.

*The Dentists Bill.*—It is understood that the Bill is being redrafted and will be presented again at some future date. There seems to be little prospect of its being proceeded with in Parliament next session.

*Factory Legislation.*—Regulations have been drafted under the Shop Acts with a view to making it compulsory for certain trades and professions, including dentists, to observe similar conditions to those laid down in the Factory Act. The date of operation, however, may be somewhat delayed.

*Costings.*—The services of the Association have been offered to the B.D.A. in arriving at costings for denture work at hospitals, in connexion with which an enquiry is now proceeding.

*International Conference in Paris.*—An invitation has been extended to S.I.M.A. to be represented at an international conference of Dental Laboratory Associations to be held in Paris in March, 1953, and Mr. D. M. Beauchamp has kindly undertaken to attend on behalf of the Association.

*Week-end Conference.*—Our members are again urged to support the 1953 Week-end Conference, full details of which have already been circulated. The date is Feb. 13–14, the venue the Holborn Restaurant, and tickets for the Dinner and Dance (price 28s. 6d. each) and the Exhibition of Craftsmanship (free of charge) may be obtained from Mr. C. M. Booth, 26, Palmerston Road, Wood Green, N.22.

In addition to exhibits by our Branches and the specialized tables for Stainless Steel and Chrome Cobalt, the following will also participate in the Demonstrations at the Exhibition:—

The East Grinstead Maxillo-facial Team;
The American Dental Force at Bushey Park;
The R.A.F. training laboratory at Uxbridge.

*Resignation of Mr. A. J. Grant.*—We regret to announce that Mr. A. J. Grant has tendered his resignation from the Vice-Chairmanship and membership of the Main Committee and this has been accepted with much regret and reluctance in view of the fact that he has served on the Committee since the formation of the Dental Laboratories Section of S.I.M.A. of which he has been Vice-Chairman for many years. His experience and guidance have been of much service and he will be greatly missed. All members will, we feel sure, join us in extending to him our grateful thanks.

*New Member.*—Mr. G. J. Weeks, 226, Dalston Lane, E.8, has been admitted as a full member of the Dental Laboratories Section.

*Change of Address.*—Mr. A. L. Sawyer has moved to the following address: "Waverney", St. Mary's Road, Long Ditton, Surbiton, Surrey.